

## WEST Search History

10/768,886

DATE: Wednesday, January 18, 2006

Hide?	Set Name	Query	Hit Count
		<i>DB=PGPB; THES=ASSIGNEE; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L1	mitogen activated kinase or MAPK?	781
<input type="checkbox"/>	L2	L1 and (stress or abiotic stress or biotic stress)	482
<input type="checkbox"/>	L3	L2 and (transgenic or transform?)	214
<input type="checkbox"/>	L4	L3 and plant	151
<input type="checkbox"/>	L5	L3 and (dicot or monocot)	18

END OF SEARCH HISTORY

10/768,886

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NEWS 7 DEC 21 IPC search and display fields enhanced in CA/CAPLUS with the  
IPC reform  
NEWS 8 DEC 23 New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/  
USPAT2  
NEWS 9 JAN 13 IPC 8 searching in IFIPAT, IFIUDB, and IFICDB  
NEWS 10 JAN 13 New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to  
INPADOC  
NEWS 11 JAN 17 Pre-1988 INPI data added to MARPAT  
NEWS 12 JAN 17 IPC 8 in the WPI family of databases including WPIFV  
  
NEWS EXPRESS JANUARY 03 CURRENT VERSION FOR WINDOWS IS V8.01,  
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FILE 'HOME' ENTERED AT 17:09:45 ON 18 JAN 2006

=> file agricola caplus biosis

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'AGRICOLA' ENTERED AT 17:10:10 ON 18 JAN 2006

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=> s Mitogen activated kinase or MAPK?  
L1 32584 MITOGEN ACTIVATED KINASE OR MAPK?

=> s l1 and stress  
L2 4862 L1 AND STRESS

=> s l2 and (transgenic or transform?)  
L3 406 L2 AND (TRANSGENIC OR TRANSFORM?)

=> s monocot or dicot  
L4 1503213 MONOCOT OR DICOT

=> s l3 and l4  
L5 13 L3 AND L4

=> s l1 and abiotic stress  
2 FILES SEARCHED...  
L6 72 L1 AND ABIOTIC STRESS

=> s l6 and (transgenic or transform)  
L7 9 L6 AND (TRANSGENIC OR TRANSFORM)

=> dup rem l3  
PROCESSING COMPLETED FOR L3  
L8 282 DUP REM L3 (124 DUPLICATES REMOVED)

=> d l3 1-282 ti

L3 ANSWER 1 OF 406 AGRICOLA Compiled and distributed by the National  
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(2006) on STN

TI Overexpression of SIPK in tobacco enhances ozone-induced ethylene  
formation and blocks ozone-induced SA accumulation.

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TI NF-[kappa]B and Not the **MAPK** Signaling Pathway Regulates  
GADD45[beta] Expression during Acute Inflammation.

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TI Inhibitory effect on activator protein-1, nuclear factor-kappaB, and cell  
**transformation** by extracts of strawberries (Fragaria x ananassa  
Duch.).

L3 ANSWER 4 OF 406 AGRICOLA Compiled and distributed by the National  
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TI Selenomethionine stimulates **MAPK** (ERK) phosphorylation, protein  
oxidation, and DNA synthesis in gastric cancer cells.

- L3 ANSWER 5 OF 406 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN
- TI Activation of a mitogen-activated protein kinase cascade induces WRKY family of transcription factors and defense genes in tobacco.
- L3 ANSWER 6 OF 406 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN
- TI Interaction between two mitogen-activated protein kinases during tobacco defense signaling.
- L3 ANSWER 7 OF 406 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN
- TI NDP kinase 2 interacts with two oxidative **stress**-activated **MAPKs** to regulate cellular redox state and enhances multiple **stress** tolerance in **transgenic** plants.
- L3 ANSWER 8 OF 406 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN
- TI Double jeopardy: both overexpression and suppression of a redox-activated plant mitogen-activated protein kinase render tobacco plants ozone sensitive.
- L3 ANSWER 9 OF 406 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN
- TI Activation of tomato PR and wound-related genes by a mutagenized tomato MAP kinase kinase through divergent pathways.
- L3 ANSWER 10 OF 406 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN
- TI Auxin induces mitogenic activated protein kinase (**MAPK**) activation in roots of Arabidopsis seedlings.
- L3 ANSWER 11 OF 406 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN
- TI Regulation of gene expression during water deficit **stress**.
- L3 ANSWER 12 OF 406 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN
- TI A transmembrane hybrid-type histidine kinase in Arabidopsis functions as an osmosensor.
- L3 ANSWER 13 OF 406 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN
- TI MP2C, a plant protein phosphatase 2C, functions as a negative regulator of mitogen-activated protein kinase pathways in yeast and plants.

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TI The involvement of cytokinins in plant responses to environmental  
**stress**.

L3 ANSWER 15 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI A **MAPK** gene from Dead Sea fungus confers **stress**  
tolerance to lithium salt and freezing-thawing: Prospects for saline  
agriculture

L3 ANSWER 16 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI A mitogen-activated protein kinase NtMPK4 activated by SIPKK is required  
for jasmonic acid signaling and involved in ozone tolerance via stomatal  
movement in tobacco

L3 ANSWER 17 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Involvement of MINK, a Ste20 family kinase, in Ras oncogene-induced growth  
arrest in human ovarian surface epithelial cells

L3 ANSWER 18 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Restoration of G1/S arrest in E1A + c-Ha-ras-**transformed** cells  
by Bcl-2 overexpression

L3 ANSWER 19 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Opposing effects of oestradiol and progesterone on intracellular pathways  
and activation processes in the oxidative **stress** induced  
activation of cultured rat hepatic stellate cells

L3 ANSWER 20 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Use of nematode responsive domains from soybean promoter for  
phosphoribosylformylglycinamide ribonucleotide (FGAM) synthase gene in  
control of nematode infection

L3 ANSWER 21 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI **Stress**-induced nuclear export of 5-lipoxygenase

L3 ANSWER 22 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Expression of p66Shc protein correlates with proliferation of human  
prostate cancer cells

L3 ANSWER 23 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI AMP-Activated Protein Kinase Activates p38 Mitogen-Activated Protein  
Kinase by Increasing Recruitment of p38 **MAPK** to TAB1 in the  
Ischemic Heart

L3 ANSWER 24 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Diagnosing depression by analyzing expression profiles of marker genes

L3 ANSWER 25 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Role of the p38 Mitogen-Activated Protein Kinase Pathway in  
Cytokine-Mediated Hematopoietic Suppression in Myelodysplastic Syndromes

L3 ANSWER 26 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Adhesion and Rac1-dependent regulation of biglycan gene expression by  
**transforming** growth factor- $\beta$ : evidence for oxidative  
signaling through NADPH oxidase

L3 ANSWER 27 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Anisomycin induces COX-2 mRNA expression through p38MAPK and CREB  
independent of small GTPases in intestinal epithelial cells

L3 ANSWER 28 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Genes with differential expression profile between human dental pulp stem cells and mesenchymal stem cells and use for regenerating tooth germ

L3 ANSWER 29 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI 17 $\alpha$ -estradiol: A Brain-active estrogen?

L3 ANSWER 30 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Rhodopsin maturation defects induce photoreceptor death by apoptosis: a fly model for RhodopsinPro23His human retinitis pigmentosa

L3 ANSWER 31 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Researches of heart failure using animal models

L3 ANSWER 32 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Mitochondria-to-nucleus **stress** signaling in mammalian cells: nature of nuclear gene targets, transcription regulation, and induced resistance to apoptosis

L3 ANSWER 33 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Therapeutic and carrier molecules

L3 ANSWER 34 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Prevention of Cardiac Hypertrophy by Atorvastatin in a **Transgenic** Rabbit Model of Human Hypertrophic Cardiomyopathy

L3 ANSWER 35 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI 17 $\beta$ -Estradiol stimulates **MAPK** signaling pathway in human lens epithelial cell cultures preventing collapse of mitochondrial membrane potential during acute oxidative **stress**

L3 ANSWER 36 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Overexpression of SIPK in tobacco enhances ozone-induced ethylene formation and blocks ozone-induced SA accumulation

L3 ANSWER 37 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Isolation and characterization of an oilseed rape MAP kinase BnMPK3 involved in diverse environmental **stresses**

L3 ANSWER 38 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Ecabet sodium prevents the delay of wound repair in intestinal epithelial cells induced by hydrogen peroxide

L3 ANSWER 39 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Building a human kinase gene repository: Bioinformatics, molecular cloning, and functional validation

L3 ANSWER 40 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Taurine inhibits oxidative damage and prevents fibrosis in carbon tetrachloride-induced hepatic fibrosis

L3 ANSWER 41 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI NF- $\kappa$ B and Not the **MAPK** Signaling Pathway Regulates GADD45 $\beta$  Expression during Acute Inflammation

L3 ANSWER 42 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Mammalian mitogen-activated protein kinase signaling pathways

L3 ANSWER 43 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Gene expression profiles for the diagnosis and prognosis of breast cancer

L3 ANSWER 44 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Complete Inhibition of Anisomycin and UV Radiation but Not Cytokine Induced JNK and p38 Activation by an Aryl-substituted

Dihydropyrrolopyrazole Quinoline and Mixed Lineage Kinase 7 Small  
Interfering RNA

- L3 ANSWER 45 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI The Ras-**MAPK** signal transduction pathway, cancer and chromatin remodeling
- L3 ANSWER 46 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Endogenous oxidative **stress** in sporadic Alzheimer's disease neuronal cybrids reduces viability by increasing apoptosis through pro-death signaling pathways and is mimicked by oxidant exposure of control cybrids
- L3 ANSWER 47 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Functional role of AMP-activated protein kinase in the heart during exercise
- L3 ANSWER 48 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Molecular mechanisms behind the chemopreventive effects of anthocyanidins
- L3 ANSWER 49 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Inhibitory Effect on Activator Protein-1, Nuclear Factor-KappaB, and Cell **Transformation** by Extracts of Strawberries (*Fragaria*  $\mu$  *ananassa* Duch.)
- L3 ANSWER 50 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Inhibition of cardiac fibroblast proliferation and myofibroblast differentiation by resveratrol
- L3 ANSWER 51 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Cyclooxygenase-2 induction and prostaglandin E2 accumulation in squamous cell carcinoma as a consequence of epidermal growth factor receptor activation by imatinib mesylate
- L3 ANSWER 52 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Identification of human myometrial target genes of the c-Jun NH2-terminal kinase (JNK) pathway: the role of activating transcription factor 2 (ATF2) and a novel spliced isoform ATF2-small
- L3 ANSWER 53 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Mouse corticotropin-releasing factor receptor type 2 $\alpha$  gene: isolation, distribution, pharmacological characterization and regulation by **stress** and glucocorticoids
- L3 ANSWER 54 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Selective inhibition of activin receptor-like kinase 5 signaling blocks profibrotic **transforming** growth factor  $\beta$  responses in skin fibroblasts
- L3 ANSWER 55 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Diet-Dependent Effects of the *Drosophila* Mnk1/Mnk2 Homolog Lk6 on Growth via eIF4E
- L3 ANSWER 56 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Phosphorylation of 1-aminocyclopropane-1-carboxylic acid synthase by MPK6, a **stress**-responsive mitogen-activated protein kinase, induces ethylene biosynthesis in *Arabidopsis*
- L3 ANSWER 57 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Inhibition of **stress**-induced ligand-dependent EGFR activation in cancer therapy
- L3 ANSWER 58 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Toll-like Receptor 2 and Mitogen- and **Stress**-activated Kinase 1

Are Effectors of Mycobacterium avium-induced Cyclooxygenase-2 Expression in Macrophages

- L3 ANSWER 59 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Effect of hypoxia and reoxygenation on gene expression and response to interleukin-1 in cultured articular chondrocytes
- L3 ANSWER 60 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Molecular basis for regulating cellular senescence program and its possible application to drug design
- L3 ANSWER 61 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Combination therapy for cancer and other proliferative disorders
- L3 ANSWER 62 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Exploitation of KESTREL to identify NDRG family members as physiological substrates for SGK1 and GSK3
- L3 ANSWER 63 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Expression of **stress**-activated kinases c-Jun N-terminal kinase (SAPK/JNK-P) and p38 kinase (p38-P), and tau hyperphosphorylation in neurites surrounding  $\beta$ A plaques in APP Tg2576 mice
- L3 ANSWER 64 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Selenomethionine stimulates **MAPK** (ERK) phosphorylation, protein oxidation, and DNA synthesis in gastric cancer cells
- L3 ANSWER 65 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Molecular mechanisms behind the dose-dependent differential activation of **MAPK** pathways induced by **transforming** growth factor- $\beta$ 1 in hematopoietic cells
- L3 ANSWER 66 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Endoplasmic Reticulum **Stress** Stimulates the Expression of Cyclooxygenase-2 through Activation of NF- $\kappa$ B and pp38 Mitogen-activated Protein Kinase
- L3 ANSWER 67 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Protein and cDNA sequences of rice mitogen-activated protein kinase **MAPK5** and their use in enhancing biotic and abiotic **stress** tolerance in plants
- L3 ANSWER 68 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Post-translational modification of p53 in tumorigenesis
- L3 ANSWER 69 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI 4-hydroxy-2,3-nonenal activates activator protein-1 and mitogen-activated protein kinases in rat pancreatic stellate cells
- L3 ANSWER 70 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Expression of inflammatory and septic genes to identify antiinflammatory and antiseptic peptides for therapeutic use
- L3 ANSWER 71 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Blocking the Raf/MEK/ERK Pathway Sensitizes Acute Myelogenous Leukemia Cells to Lovastatin-Induced Apoptosis
- L3 ANSWER 72 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Induction of tenascin-C by cyclic tensile strain versus growth factors: distinct contributions by Rho/ROCK and **MAPK** signaling pathways
- L3 ANSWER 73 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Silibinin Protects against Photocarcinogenesis via Modulation of Cell Cycle Regulators, Mitogen-Activated Protein Kinases, and Akt Signaling



L3 ANSWER 74 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Angiotensin II activates the human renin promoter in an in vitro model: the role of c-Jun-N-terminal kinase

L3 ANSWER 75 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Aeromonas hydrophila Cytotoxic Enterotoxin Activates Mitogen-activated Protein Kinases and Induces Apoptosis in Murine Macrophages and Human Intestinal Epithelial Cells

L3 ANSWER 76 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Quantitative proteomic and transcriptional analysis of the response to the p38 mitogen-activated protein kinase inhibitor SB203580 in **transformed** follicular lymphoma cells

L3 ANSWER 77 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Sphingosine 1-Phosphate Cross-activates the Smad Signaling Cascade and Mimics **Transforming** Growth Factor- $\beta$ -induced Cell Responses

L3 ANSWER 78 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI The signaling pathways in tissue morphogenesis: a lesson from mice with eye-open at birth phenotype

L3 ANSWER 79 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Raf-1 kinase is required for cardiac hypertrophy and cardiomyocyte survival in response to pressure overload

L3 ANSWER 80 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI **Transforming** growth factor- $\beta$ 1 stimulates vascular endothelial growth factor 164 via mitogen-activated protein kinase kinase 3-p38 $\alpha$  and p38 $\delta$  mitogen-activated protein kinase-dependent pathway in murine mesangial cells

L3 ANSWER 81 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Carbon monoxide generating compounds for treatment of vascular, inflammatory and immune disorders

L3 ANSWER 82 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Activin Receptor-like Kinase-7 Induces Apoptosis through Activation of **MAPKs** in a Smad3-dependent Mechanism in Hepatoma Cells

L3 ANSWER 83 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Gene expression profiles for diagnosing renal cell carcinoma and other solid tumors

L3 ANSWER 84 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Disruption of MKK4 signaling reveals its tumor-suppressor role in embryonic stem cells

L3 ANSWER 85 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Overexpression of HER2 (erbB2) in Human Breast Epithelial Cells Unmasks **Transforming** Growth Factor  $\beta$ -induced Cell Motility

L3 ANSWER 86 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Direct effects of high glucose and insulin on protein synthesis in cultured cardiac myocytes and DNA and collagen synthesis in cardiac fibroblasts

L3 ANSWER 87 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Activation of a mitogen-activated protein kinase cascade induced WRKY family of transcription factors and defense genes in tobacco

L3 ANSWER 88 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Evolution of the innate immune system: The worm perspective

L3 ANSWER 89 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Expression of the Nicotiana protein kinase (NPK1) enhanced drought tolerance in **transgenic** maize

L3 ANSWER 90 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Inhaled particles and lung cancer. Part A: mechanisms

L3 ANSWER 91 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Effect of **transforming** growth factor-beta on activity of connective tissue growth factor gene promoter in mouse NIH/3T3 fibroblasts

L3 ANSWER 92 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Requirement of TGF- $\beta$  receptor-dependent activation of c-Jun N-terminal kinases (JNKs)/**stress**-activated protein kinases (Sapks) for TGF- $\beta$  up-regulation of the urokinase-type plasminogen activator receptor

L3 ANSWER 93 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Down-regulation of DENN/MADD, a TNF receptor binding protein, correlates with neuronal cell death in Alzheimer's disease brain and hippocampal neurons

L3 ANSWER 94 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Differential activation of **MAPK** signaling pathways by TGF- $\beta$ 1 forms the molecular mechanism behind its dose-dependent bidirectional effects on hematopoiesis

L3 ANSWER 95 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI PML is a direct p53 target that modulates p53 effector functions

L3 ANSWER 96 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI MAP kinase signaling in diverse effects of ethanol

L3 ANSWER 97 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Constitutive activation of **MAPK** cascade in acute quadriplegic myopathy

L3 ANSWER 98 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Coupling of boswellic acid-induced Ca<sup>2+</sup> mobilisation and **MAPK** activation to lipid metabolism and peroxide formation in human leucocytes

L3 ANSWER 99 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI The Role of p38 $\alpha$  Mitogen-Activated Protein Kinase Activation in Renal Fibrosis

L3 ANSWER 100 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Expression and effects of cardiotrophin-1 (CT-1) in human airway smooth muscle cells

L3 ANSWER 101 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Plant salt tolerance

L3 ANSWER 102 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Elevated ERK-MAP kinase activity protects the FOS family member FRA-1 against proteasomal degradation in colon carcinoma cells

L3 ANSWER 103 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Plant **MAPK** Phosphatase Interacts with Calmodulins

L3 ANSWER 104 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI P38 mitogen-activated protein kinases: their role in carcinogenesis

L3 ANSWER 105 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Redefining the roles of p38 and JNK signaling in cardiac hypertrophy: dichotomy between cultured myocytes and animal models

L3 ANSWER 106 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Gene expression profiles in human cells submitted to genotoxic **stress**

L3 ANSWER 107 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Immune Activation of NF- $\kappa$ B and JNK Requires Drosophila TAK1

L3 ANSWER 108 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Activation of a **stress**-responsive mitogen-activated protein kinase cascade induces the biosynthesis of ethylene in plants

L3 ANSWER 109 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Subunit selectivity of the crosstalk between GR and AP-1

L3 ANSWER 110 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Hepatitis C virus core protein activates ERK and p38 **MAPK** in cooperation with ethanol in **transgenic** mice

L3 ANSWER 111 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Expression of the Drosophila p38b gene promoter during development and in the immune response

L3 ANSWER 112 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Genetic response to farnesyltransferase inhibitors: proapoptotic targets of RhoB

L3 ANSWER 113 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI p38 mitogen-activated protein kinase protects glomerular epithelial cells from complement-mediated cell injury

L3 ANSWER 114 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI c-Jun N-terminal kinases (JNK) antagonize cardiac growth through cross-talk with calcineurin-NFAT signaling

L3 ANSWER 115 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Attenuation of neuronal cell death by SOD1 is associated with extracellular signal-regulated kinase after transient focal cerebral ischemia in mice

L3 ANSWER 116 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Fibrogenic **stresses** activate different mitogen-activated protein kinase pathways in renal epithelial, endothelial or fibroblast cell populations

L3 ANSWER 117 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Production of cells with increased differentiation potential by **stress** induction of the **MAPK** kinase signaling pathway

L3 ANSWER 118 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Modulation of DENN-MADD expression and interactions for treating neurological disorders

L3 ANSWER 119 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI **MAPK** pathways in radiation responses

L3 ANSWER 120 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Functional genomics as a window on radiation **stress** signaling

L3 ANSWER 121 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Mechanism of p38 MAP kinase activation in vivo

L3 ANSWER 122 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Evidence that increased 12-lipoxygenase expression impairs pancreatic  $\beta$  cell function and viability

L3 ANSWER 123 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Analysis of genes induced in human periodontal ligament by static continuous stretch

L3 ANSWER 124 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Role of Double-Stranded RNA-Activated Protein Kinase R (PKR) in Deoxynivalenol-Induced Ribotoxic **Stress** Response

L3 ANSWER 125 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Signal transduction pathways for P2Y2 and P2X7 nucleotide receptors that mediate neuroinflammatory responses in astrocytes and microglial cells

L3 ANSWER 126 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI cDNA, DNA and protein sequences of Drosophila p38 **MAPK** activation protein D-MEKK1s and their uses for **stress** resistance

L3 ANSWER 127 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Mitogen and **stress** response kinase-1 (MSK1) mediates excitotoxic induced death of hippocampal neurones

L3 ANSWER 128 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Double-stranded RNA activates a p38 **MAPK**-dependent cell survival program in biliary epithelia

L3 ANSWER 129 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Persistent activation of p38 mitogen-activated protein kinase in a mouse model of familial amyotrophic lateral sclerosis correlates with disease progression

L3 ANSWER 130 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Identification of distinct and common gene expression changes after oxidative **stress** and gamma and ultraviolet radiation

L3 ANSWER 131 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Loss of oncogenic H-ras-induced cell cycle arrest and p38 mitogen-activated protein kinase activation by disruption of Gadd45a

L3 ANSWER 132 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Targeted inhibition of p38 **MAPK** promotes hypertrophic cardiomyopathy through upregulation of calcineurin-NFAT signaling

L3 ANSWER 133 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Angiotensin II induces apoptosis in renal proximal tubular cells

L3 ANSWER 134 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Mitogen-activated protein kinases: New molecular targets for pharmacological treatment of inflammatory lung diseases

L3 ANSWER 135 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Regulation of the intestinal epithelial response to cyclic strain by extracellular matrix proteins

L3 ANSWER 136 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Disease resistance and abiotic **stress** tolerance in rice are inversely modulated by an abscisic acid-inducible mitogen-activated protein kinase

L3 ANSWER 137 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI The role of the Grb2-p38 **MAPK** signaling pathway in cardiac hypertrophy and fibrosis

L3 ANSWER 138 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI VEGF-induced activation of the PI3-K/Akt pathway reduces mutant SOD1-mediated motor neuron cell death

L3 ANSWER 139 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI **Stress** and radiation-induced activation of multiple intracellular signaling pathways

L3 ANSWER 140 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Protein kinases and the hypoxia-inducible factor-1, two switches in angiogenesis

L3 ANSWER 141 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Inhibition of tumor necrosis factor- $\alpha$ -dependent cardiomyocyte apoptosis by metallothionein

L3 ANSWER 142 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI PPAR- $\alpha$  ligands inhibit H2O2-mediated activation of **transforming** growth factor- $\beta$ 1 in human mesangial cells

L3 ANSWER 143 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Putative homologs of SSK22 **MAPKK** kinase and PBS2 **MAPK** kinase of *Saccharomyces cerevisiae* encoded by os-4 and os-5 genes for osmotic sensitivity and fungicide resistance in *Neurospora crassa*

L3 ANSWER 144 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Liver tumor development: c-Jun antagonizes the proapoptotic activity of p53

L3 ANSWER 145 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Regulation of the ER81 transcription factor and its coactivators by mitogen- and **stress**-activated protein kinase 1 (MSK1)

L3 ANSWER 146 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI p38-mitogen-activated protein kinase expressing cells for screening antiaging agents

L3 ANSWER 147 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI NDP kinase 2 interacts with two oxidative **stress**-activated **MAPKs** to regulate cellular redox state and enhances multiple **stress** tolerance in **transgenic** plants

L3 ANSWER 148 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Gadd45a protects against UV irradiation-induced skin tumors, and promotes apoptosis and **stress** signaling via **MAPK** and p53

L3 ANSWER 149 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Post-transcriptional regulation of VEGF expression by oxidized LDL in human macrophages

L3 ANSWER 150 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Requirement of Mitogen-activated Protein Kinase Kinase 3 (MKK3) for Activation of p38 $\alpha$  and p38 $\delta$  **MAPK** Isoforms by TGF- $\beta$ 1 in Murine Mesangial Cells

L3 ANSWER 151 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI TGF- $\beta$ 1 stimulates HO-1 via the p38 mitogen-activated protein kinase in A549 pulmonary epithelial cells

L3 ANSWER 152 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI DLPC decreases TGF- $\beta$ 1-induced collagen mRNA by inhibiting p38 **MAPK** in hepatic stellate cells

L3 ANSWER 153 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Serum deprivation increases the expression of low density lipoprotein receptor-related protein in primary cultured rat astrocytes

L3 ANSWER 154 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI A screening method for constitutively active mutants of eukaryotic **MAPK** kinases and use in drug screening and drug design

L3 ANSWER 155 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Dietary salt intake activates MAP kinases in the rat kidney

L3 ANSWER 156 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Double jeopardy: both overexpression and suppression of a redox-activated plant mitogen-activated protein kinase render tobacco plants ozone sensitive

L3 ANSWER 157 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Reactive oxygen species stimulated human hepatoma cell proliferation via cross-talk between PI3-K/PKB and JNK signaling pathways

L3 ANSWER 158 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Red wine polyphenols inhibit the growth of colon carcinoma cells and modulate the activation pattern of mitogen-activated protein kinases

L3 ANSWER 159 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Survival signaling mediated by c-Jun NH2-terminal kinase in **transformed** B lymphoblasts

L3 ANSWER 160 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI The **stress**-activated protein kinases p38 $\alpha$  and JNK1 stabilize p21Cip1 by phosphorylation

L3 ANSWER 161 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Constitutive JNK activation in NIH 3T3 fibroblasts induces a partially **transformed** phenotype

L3 ANSWER 162 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Evolution of osmosensing signal transduction in Metazoa: **stress**-activated protein kinases p38 and JNK

L3 ANSWER 163 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Cloning and sequence of a salt **stress**-inducible MAP kinase kinase SIMKK from alfalfa

L3 ANSWER 164 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Activation of c-Jun N-terminal kinase and p38 in an Alzheimer's disease model is associated with amyloid deposition

L3 ANSWER 165 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Selective p38 activation in human non-small cell lung cancer

L3 ANSWER 166 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Sequential activation of the MEK-extracellular signal-regulated kinase and MKK3/6-p38 mitogen-activated protein kinase pathways mediates oncogenic ras-induced premature senescence

L3 ANSWER 167 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI **Transforming** growth factor- $\beta$ -induced mobilization of actin cytoskeleton requires signaling by small GTPases Cdc42 and RhoA

L3 ANSWER 168 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI RACK1, an insulin-like growth factor I (IGF-I) receptor-interacting protein, modulates IGF-I-dependent integrin signaling and promotes cell spreading and contact with extracellular matrix

L3 ANSWER 169 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Potent **transforming** activity of the small GTP-binding protein Rit in NIH 3T3 cells: evidence for a role of a p38 $\gamma$ -dependent signaling pathway

L3 ANSWER 170 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Post-transcriptional down-regulation of ROCK1/Rho-kinase through an MEK-dependent pathway leads to cytoskeleton disruption in Ras-**transformed** fibroblasts

L3 ANSWER 171 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Mechanisms of tamoxifen-induced apoptosis

L3 ANSWER 172 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Enamel matrix derivative (EMDOGAIN) rapidly stimulates phosphorylation of the MAP kinase family and nuclear accumulation of smad2 in both oral epithelial and fibroblastic human cells

L3 ANSWER 173 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI The ups and downs of MEK kinase interactions

L3 ANSWER 174 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Gene expression profile in response to chromium-induced cell **stress** in A549 cells

L3 ANSWER 175 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Extracellular signals and intracellular pathways in diabetic nephropathy

L3 ANSWER 176 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Plant protoplast gene expression systems and uses in identifying a gene product that modulates expression of a gene of interest

L3 ANSWER 177 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Activation of extracellular signal-regulated kinase and c-Jun-NH2-terminal kinase but not p38 mitogen-activated protein kinases is required for RRR- $\alpha$ -tocopheryl succinate-induced apoptosis of human breast cancer cells

L3 ANSWER 178 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Activation of **MAPK** p42/p44, **MAPK** p38, and JNK in primary rat hepatic stellate cells

L3 ANSWER 179 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI p38 **MAPK** and **MAPK** kinase 3/6 mRNA and activities are increased in early diabetic glomeruli

L3 ANSWER 180 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Raf-1 promotes cell survival by antagonizing apoptosis signal-regulating kinase 1 through a MEK-ERK independent mechanism

L3 ANSWER 181 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Induction of the SAPK activator MIG-6 by the alkylating agent methyl methanesulfonate

L3 ANSWER 182 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Protein kinase **stress**-related proteins (PKSRP) of Physcomitrella and their use in improving plant tolerance to environmental **stress**

L3 ANSWER 183 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI The cell cycle-regulatory CDC25A phosphatase inhibits apoptosis signal-regulating kinase 1

L3 ANSWER 184 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Method of using **mapk4** and orthologues thereof to control plant disease resistance and plant growth

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TI Transient activation of jun N-terminal kinases and protection from apoptosis by the insulin-like growth factor I receptor can be suppressed by dicumarol

L3 ANSWER 186 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Expression of a novel RNA-splicing factor, RA301/Tra2 $\beta$ , in vascular lesions and its role in smooth muscle cell proliferation

L3 ANSWER 187 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Stimulation of pro- $\alpha$ 1(I) collagen by TGF- $\beta$ 1 in mesangial cells: role of the p38 **MAPK** pathway

L3 ANSWER 188 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Cell-permeable peptide inhibitors of the JNK signal transduction pathway and their therapeutic use

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TI Functional analysis of apoptosis signal-regulating kinase 1 (ASK 1)-binding proteins

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TI Scavenging of extracellular H<sub>2</sub>O<sub>2</sub> by catalase inhibits the proliferation of HER-2/Neu-**transformed** Rat-1 fibroblasts through the induction of a **stress** response

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TI p38 mitogen-activated protein kinase-dependent activation of protein phosphatases 1 and 2A inhibits MEK1 and MEK2 activity and collagenase 1 (MMP-1) gene expression

L3 ANSWER 192 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Regulation of the TAK1 signaling pathway by protein phosphatase 2C

L3 ANSWER 193 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Tomato mitogen-activated protein kinase kinase tMEK2 in signal transduction pathways and disease and wound **stresses**

L3 ANSWER 194 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI The dual-specificity phosphatase MKP-1 limits the cardiac hypertrophic response in vitro and in vivo

L3 ANSWER 195 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Differential phosphorylation of mitogen-activated protein kinase families by epidermal growth factor and ultraviolet B irradiation in SV40-**transformed** human keratinocytes

L3 ANSWER 196 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Hepatitis C virus core protein enhances the activation of the transcription factor, elk1, in response to mitogenic stimuli

L3 ANSWER 197 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN

TI Involvement of p38 mitogen-activated protein kinase signaling in **transformed** growth of a cholangiocarcinoma cell line

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TI Activation, differential localization, and regulation of the **stress**-activated protein kinases, extracellular signal-regulated kinase, c-Jun N-terminal kinase, and p38 mitogen-activated protein kinase, in synovial tissue and cells in rheumatoid arthritis



L3 ANSWER 199 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI ASK1 inhibits interleukin-1-induced NF- $\kappa$ B activity through disruption of TRAF6-TAK1 interaction

L3 ANSWER 200 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Angiotensin II-induced cardiac hypertrophy is associated with different mitogen-activated protein kinase activation in normotensive and hypertensive mice

L3 ANSWER 201 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI The Kaposi's sarcoma-associated herpes virus G protein-coupled receptor up-regulates vascular endothelial growth factor expression and secretion through mitogen-activated protein kinase and p38 pathways acting on hypoxia-inducible factor 1 $\alpha$

L3 ANSWER 202 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Fas ligand, Bcl-2, granulocyte colony-stimulating factor, and p38 mitogen-activated protein kinase: regulators of distinct cell death and survival pathways in granulocytes

L3 ANSWER 203 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI ERK1/2 phosphorylation, induced by electromagnetic fields, diminishes during neoplastic **transformation**

L3 ANSWER 204 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Signaling angiogenesis via p42/p44 MAP kinase cascade

L3 ANSWER 205 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Mechanical **stress**-induced cardiac hypertrophy: mechanisms and signal transduction pathways

L3 ANSWER 206 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI BMP2-induced apoptosis is mediated by activation of the TAK1-p38 kinase pathway that is negatively regulated by Smad6

L3 ANSWER 207 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Alternative antigen receptor (TCR) signaling in T cells derived from ZAP-70-deficient patients expressing high levels of Syk

L3 ANSWER 208 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI The MKK3/6-p38-signaling cascade alters the subcellular distribution of hnRNP A1 and modulates alternative splicing regulation

L3 ANSWER 209 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Interaction among mitochondria, mitogen-activated protein kinases, and nuclear factor- $\kappa$ B in cellular models of Parkinson's disease

L3 ANSWER 210 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Functional analysis of oxidative **stress**-activated mitogen-activated protein kinase cascade in plants

L3 ANSWER 211 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI **Transgenic** plants with increased **stress** tolerance expressing a **MAPKKK** protein kinase domain

L3 ANSWER 212 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Mitogen- and **stress**- activated protein kinases in stellate cells of normal and fibrotic rat liver

L3 ANSWER 213 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Overexpression of core 2 N-acetylglycosaminyltransferase enhances cytokine actions and induces hypertrophic myocardium in **transgenic** mice

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TI Retinoic acid selectively activates the ERK2 but not JNK/SAPK or p38 MAP kinases when inducing myeloid differentiation

L3 ANSWER 215 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Regulation of gene expression during water deficit **stress**

L3 ANSWER 216 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI The **stress**-activated protein kinase pathways

L3 ANSWER 217 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Pulsatile Stretch Activates Mitogen-Activated Protein Kinase (**MAPK**) Family Members and Focal Adhesion Kinase (p125FAK) in Cultured Rat Cardiac Myocytes

L3 ANSWER 218 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Cell cycle arrest and reversion of Ras-induced **transformation** by a conditionally activated form of mitogen-activated protein kinase kinase kinase 3

L3 ANSWER 219 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Differential contribution of the ERK and JNK mitogen-activated protein kinase cascades to Ras **transformation** of HT1080 fibrosarcoma and DLD-1 colon carcinoma cells

L3 ANSWER 220 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI p38 mitogen-activated protein kinase can be involved in **transforming** growth factor  $\beta$  superfamily signal transduction in Drosophila wing morphogenesis

L3 ANSWER 221 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Mitogen-activated protein kinase cascade and transcription factors: the opposite role of MKK3/6-p38K and MKK1-**MAPK**

L3 ANSWER 222 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Activation of mesangial cell signaling cascades in response to mechanical strain

L3 ANSWER 223 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Mitogen-activated protein kinase cascade and cell cycle-related genes in the kidney

L3 ANSWER 224 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Oxidant-mediated activation of mitogen- activated protein kinases and nuclear transcription factors in the cardiovascular system: a brief overview

L3 ANSWER 225 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Effector domain mutants of Rho dissociate cytoskeletal changes from nuclear signaling and cellular **transformation**

L3 ANSWER 226 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Cooperativity between the polyamine pathway and her-2neu in **transformation** of human mammary epithelial cells in culture: role of the **MAPK** pathway

L3 ANSWER 227 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI The involvement of cytokinins in plant responses to environmental **stress**

L3 ANSWER 228 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
TI Induction of vascular endothelial growth factor by hypoxia is modulated by a phosphatidylinositol 3-kinase/Akt signaling pathway in Ha-ras **transformed** cells through a hypoxia inducible factor-1 transcriptional element

L3 ANSWER 229 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Activation of the hematopoietic progenitor kinase-1 (HPK1)-dependent, **stress**-activated c-Jun N-terminal kinase (JNK) pathway by **transforming** growth factor  $\beta$  (TGF- $\beta$ )-activated kinase (TAK1), a kinase mediator of TGF  $\beta$  signal transduction

L3 ANSWER 230 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI c-Src is required for oxidative **stress**-mediated activation of big mitogen-activated protein kinase 1 (BMK1)

L3 ANSWER 231 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI v-src-Induced cell shape changes in rat fibroblasts require new gene transcription and precede loss of focal adhesions

L3 ANSWER 232 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI TGF $\beta$  regulation of mitogen-activated protein kinases in human breast cancer cells

L3 ANSWER 233 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Cdc42Hs, but not Rac1, inhibits serum-stimulated cell cycle progression at G1/S through a mechanism requiring p38/RK

L3 ANSWER 234 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Involvement of extracellular signal-regulated kinase 2 and **stress**-activated protein kinase/Jun N-terminal kinase activation by **transforming** growth factor  $\beta$  in the negative growth control of breast cancer cells

L3 ANSWER 235 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Evidence for a role of Rho-like GTPases and **stress**-activated protein kinase/c-Jun N-terminal kinase (SAPK/JNK) in **transforming** growth factor  $\beta$ -mediated signaling

L3 ANSWER 236 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Hydrogen peroxide induces complex formation of SHC-Grb2-SOS with receptor tyrosine kinase and activates Ras and extracellular signal-regulated protein kinases group of mitogen-activated protein kinases

L3 ANSWER 237 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Rac-1 dependent stimulation of the JNK/SAPK signaling pathway by Vav

L3 ANSWER 238 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Rac is required for v-Abl tyrosine kinase to activate mitogenesis

L3 ANSWER 239 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Tobacco MAP kinase: a possible mediator in wound signal transduction pathways

L3 ANSWER 240 OF 406 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Dbl and Vav mediate **transformation** via mitogen-activated protein kinase pathways that are distinct from those activated by oncogenic Ras

L3 ANSWER 241 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
 TI AMP-activated protein kinase activates p38 mitogen-activated protein kinase by increasing recruitment of p38 **MAPK** to TAB1 in the ischemic heart.

L3 ANSWER 242 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
 TI 17 $\beta$ -estradiol stimulates **MAPK** signaling pathway in human lens epithelial cell cultures preventing collapse of mitochondrial membrane potential during acute oxidative **stress**.

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STN  
TI Relevance of P38 in TGF-B-induced human tenon myofibroblast  
transdifferentiation.

L3 ANSWER 244 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
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TI Anisomycin induces COX-2 mRNA expression through p38(MAPK) and  
CREB independent of small GTPases in intestinal epithelial cells.

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TI Calorie restriction protects against age-related rat aorta sclerosis.

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TI Role of the p38 mitogen-activated protein kinase pathway in  
cytokine-mediated hematopoietic suppression in myelodysplastic syndromes.

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TI O-glycosylation of Thr-170 triggers the translocation of alpha  
B-crystallin in neonatal rat ventricular myocytes (NRVM) in response to  
**stress**.

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STN  
TI Inhibition of pancreatic stellate cell activation by green tea catechin  
through antioxidative effect.

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TI Serum deprivation induced apoptosis signaling pathways of RGC-5 retinal  
ganglion cells.

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TI Rhodopsin maturation defects induce photoreceptor death by apoptosis: a  
fly model for Rhodopsin(Pro23His) human retinitis pigmentosa.

L3 ANSWER 251 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
STN  
TI Role of TGF-beta in stem cells and cancer.

L3 ANSWER 252 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
STN  
TI 17 beta-estradiol stimulates MAPK signaling pathway in human  
lens epithelial cell cultures preventing collapse of mitochondrial  
membrane potential during acute oxidative **stress**.

L3 ANSWER 253 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
STN  
TI Isolation and characterization of an oilseed rape MAP kinase BnMPK3  
involved in diverse environmental **stresses**.

L3 ANSWER 254 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
STN  
TI Complete inhibition of anisomycin and UV radiation but not cytokine  
induced JNK and p38 activation by an aryl-substituted  
dihydropyrrolopyrazole quinoline and mixed lineage kinase 7 small  
interfering RNA.

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- TI Overexpression of SIPK in tobacco enhances ozone-induced ethylene formation and blocks ozone-induced SA accumulation.
- L3 ANSWER 256 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
- TI NF-kB and not the **MAPK** signaling pathway regulates GADD45b expression during acute inflammation.
- L3 ANSWER 257 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
- TI Inhibitory effect on activator protein-1, nuclear factor-kappaB, and cell **transformation** by extracts of strawberries (*Fragaria x ananassa* Duch.).
- L3 ANSWER 258 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
- TI Endogenous oxidative **stress** in sporadic Alzheimer's disease neuronal cybrids reduces viability by increasing apoptosis through pro-death signaling pathways and is mimicked by oxidant exposure of control cybrids.
- L3 ANSWER 259 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
- TI The Ras-**MAPK** signal transduction pathway, cancer and chromatin remodeling.
- L3 ANSWER 260 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
- TI Identification of human myometrial target genes of the c-Jun NH2-terminal kinase (JNK) pathway: the role of activating transcription factor 2 (ATF2) and a novel spliced isoform ATF2-small.
- L3 ANSWER 261 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
- TI Mouse corticotropin-releasing factor receptor type 2alpha gene: Isolation, distribution, pharmacological characterization and regulation by **stress** and glucocorticoids.
- L3 ANSWER 262 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
- TI Diet-dependent effects of the *Drosophila* Mnk1/Mnk2 homolog Lk6 on growth via eIF4E.
- L3 ANSWER 263 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
- TI Toll-like receptor 2 and mitogen- and **stress**-activated kinase 1 are effectors of *Mycobacterium avium*-induced cyclooxygenase-2 expression in macrophages.
- L3 ANSWER 264 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
- TI Phosphorylation of 1-aminocyclopropane-1-carboxylic acid synthase by MPK6, a **stress**-responsive mitogen-activated protein kinase, induces ethylene biosynthesis in *Arabidopsis*.
- L3 ANSWER 265 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
- TI Endoplasmic reticulum **stress** stimulates the expression of cyclooxygenase-2 through activation of NF-kappaB and pp38 mitogen-activated protein kinase.
- L3 ANSWER 266 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI Selenomethionine stimulates **MAPK** (ERK) phosphorylation, protein oxidation, and DNA synthesis in gastric cancer cells.

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TI Expression of **stress**-activated kinases c-Jun N-terminal kinase (SAPK/JNK-P) and p38 kinase (p38-P), and tau hyperphosphorylation in neurites surrounding betaA plaques in APP Tg2576 mice.

L3 ANSWER 268 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI Blocking the Raf/MEK/ERK pathway sensitizes acute myelogenous leukemia cells to lovastatin-induced apoptosis.

L3 ANSWER 269 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI Quantitative proteomic and transcriptional analysis of the response to the p38 mitogen-activated protein kinase inhibitor SB203580 in **transformed** follicular lymphoma cells.

L3 ANSWER 270 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI Induction of tenascin-C by cyclic tensile strain versus growth factors: distinct contributions by Rho/ROCK and **MAPK** signaling pathways.

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TI The signaling pathways in tissue morphogenesis: a lesson from mice with eye-open at birth phenotype.

L3 ANSWER 272 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI Direct effects of high glucose and insulin on protein synthesis in cultured cardiac myocytes and DNA and collagen synthesis in cardiac fibroblasts.

L3 ANSWER 273 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

TI *Aeromonas hydrophila* cytotoxic enterotoxin activates mitogen-activated protein kinases and induces apoptosis in murine macrophages and human intestinal epithelial cells.

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TI Raf-1 kinase is required for cardiac hypertrophy and cardiomyocyte survival in response to pressure overload.

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TI Sphingosine 1-phosphate cross-activates the Smad signaling cascade and mimics **transforming** growth factor-beta-induced cell responses.

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TI **Transforming** growth factor-beta1 stimulates vascular endothelial growth factor 164 via mitogen-activated protein kinase kinase 3-p38alpha and p38delta mitogen-activated protein kinase-dependent pathway in murine mesangial cells.

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TI Activin receptor-like kinase-7 induces apoptosis through activation of **MAPKs** in a Smad3-dependent mechanism in hepatoma cells.

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STN  
TI Disruption of MKK4 signaling reveals its tumor-suppressor role in  
embryonic stem cells.

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TI Overexpression of HER2 (erbB2) in human breast epithelial cells unmasks  
**transforming** growth factor beta-induced cell motility.

L3 ANSWER 280 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
STN  
TI Cryptococcus neoformans virulence gene discovery through insertional  
mutagenesis.

L3 ANSWER 281 OF 406 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
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TI Requirement of TGF-beta receptor-dependent activation of c-Jun N-terminal  
kinases (JNKs)/**stress**-activated protein kinases (Sapks) for  
TGF-beta up-regulation of the urokinase-type plasminogen activator  
receptor.

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TI Effect of **transforming** growth factor-beta on activity of  
connective tissue growth factor gene promoter in mouse NIH/3T3  
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L1 32584 S MITOGEN ACTIVATED KINASE OR MAPK?  
L2 4862 S L1 AND STRESS  
L3 406 S L2 AND (TRANSGENIC OR TRANSFORM?)  
L4 1503213 S MONOCOT OR DICOT  
L5 13 S L3 AND L4  
L6 72 S L1 AND ABIOTIC STRESS  
L7 9 S L6 AND (TRANSGENIC OR TRANSFORM)  
L8 282 DUP REM L3 (124 DUPLICATES REMOVED)

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TI Cadmium activates a mitogen-activated protein kinase gene and MBP kinases  
in rice.

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TI Differential regulation of MBP kinases by a glycoprotein elicitor and a polypeptide suppressor from *Mycosphaerella pinodes* in pea.

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TI Molecular genetic perspectives on cross-talk and specificity in **abiotic stress** signalling in plants.

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TI Convergence and divergence of stress-induced mitogen-activated protein kinase signaling pathways at the level of two distinct mitogen-activated protein kinase kinases.

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TI Oxidative stress activates ATMPK6, an arabidopsis homologue of MAP kinase.

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TI Activation of tomato PR and wound-related genes by a mutagenized tomato MAP kinase kinase through divergent pathways.

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TI Stressing the role of MAP kinases in mitogenic stimulation.

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TI Regulation of gene expression during water deficit stress.

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TI A mitogen-activated protein kinase NtMPK4 activated by SIPKK is required for jasmonic acid signaling and involved in ozone tolerance via stomatal movement in tobacco

L6 ANSWER 10 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Genome-wide analysis of hydrogen peroxide-regulated gene expression in *Arabidopsis* reveals a high light-induced transcriptional cluster involved in anthocyanin biosynthesis

L6 ANSWER 11 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Ethylene-mediated cross-talk between calcium-dependent protein kinase and **MAPK** signaling controls stress responses in plants

L6 ANSWER 12 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Signal transduction pathways under **abiotic stresses** in plants

L6 ANSWER 13 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN



TI Emerging MAP kinase pathways in plant stress signalling

L6 ANSWER 14 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Isolation and characterization of an oilseed rape MAP kinase BnMPK3 involved in diverse environmental stresses

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TI Cadmium activates a mitogen-activated protein kinase gene and MBP kinases in rice

L6 ANSWER 16 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Protein and cDNA sequences of rice mitogen-activated protein kinase **MAPK5** and their use in enhancing biotic and **abiotic stress** tolerance in plants

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TI Differential regulation of MBP kinases by a glycoprotein elicitor and a polypeptide suppressor from *Mycosphaerella pinodes* in pea

L6 ANSWER 18 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Integration of *Caenorhabditis elegans* **MAPK** pathways mediating immunity and stress resistance by MEK-1 **MAPK** kinase and VHP-1 **MAPK** phosphatase

L6 ANSWER 19 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Rapid transmission of oxidative and nitrosative stress signals from roots to shoots in *Arabidopsis*

L6 ANSWER 20 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Expression of the *Nicotiana* protein kinase (NPK1) enhanced drought tolerance in transgenic maize

L6 ANSWER 21 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Molecular genetic perspectives on cross-talk and specificity in **abiotic stress** signalling in plants

L6 ANSWER 22 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Copper treatment activates mitogen-activated protein kinase signalling in rice

L6 ANSWER 23 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Mutational Analysis of Stress-responsive Peanut Dual Specificity Protein Kinase

L6 ANSWER 24 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Transient regulation of jasmonic acid-inducible rice MAP kinase gene (OsBWMK1) by diverse biotic and **abiotic stresses**

L6 ANSWER 25 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI **Abiotic stress** signaling pathways in plant cell

L6 ANSWER 26 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Disease resistance and **abiotic stress** tolerance in rice are inversely modulated by an abscisic acid-inducible mitogen-activated protein kinase

L6 ANSWER 27 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Mitogen-activated protein kinase cascades in plants: a new nomenclature

L6 ANSWER 28 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

TI Isolation of novel rice (*Oryza sativa* L.) multiple stress responsive MAP kinase gene, OsMSRMK2, whose mRNA accumulates rapidly in response to environmental cues

L6 ANSWER 29 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Expression of *Oryza sativa* MAP kinase gene is developmentally regulated and stress-responsive

L6 ANSWER 30 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Convergence and divergence of stress-induced mitogen-activated protein kinase signaling pathways at the level of two distinct mitogen-activated protein kinase kinases

L6 ANSWER 31 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Plant MAP kinase pathways: How many and what for?

L6 ANSWER 32 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Recent advances in plant MAP kinase signalling

L6 ANSWER 33 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Oxidative stress activates ATMPK6, an Arabidopsis homologue of MAP kinase

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 TI Plant mitogen-activated protein kinase signaling cascades

L6 ANSWER 35 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Activation of tomato PR and wound-related genes by a mutagenized tomato MAP kinase kinase through divergent pathways

L6 ANSWER 36 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Tomato mitogen-activated protein kinase kinase tMEK2 in signal transduction pathways and disease and wound stresses

L6 ANSWER 37 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Various **abiotic stresses** rapidly activate Arabidopsis MAP kinases ATMPK4 and ATMPK6

L6 ANSWER 38 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Stressing the role of MAP kinases in mitogenic stimulation

L6 ANSWER 39 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 TI Mitogen-activated protein kinases in plant signal transduction: are they mitogenic?

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 TI MAP kinases in plant signal transduction: How many, and what for?

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 TI MAP kinases in plant signal transduction

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 TI MAP kinases in plant signal transduction

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 TI Activation of a mitogen-activated protein kinase NtMPK4 is involved in ozone tolerance mediated JA signaling pathway in tobacco.

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 TI Isolation and characterization of an oilseed rape MAP kinase BnMPK3 involved in diverse environmental stresses.

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TI Emerging MAP kinase pathways in plant stress signalling.

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TI Signal transduction pathways under **abiotic stresses** in  
plants.

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TI Recent advances in engineering plant tolerance to **abiotic  
stress**: achievements and limitations.

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TI Cadmium activates a mitogen-activated protein kinase gene and MBP kinases  
in rice.

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TI Differential regulation of MBP kinases by a glycoprotein elicitor and a  
polypeptide suppressor from Mycosphaerella pinodes in pea.

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TI Integration of Caenorhabditis elegans **MAPK** pathways mediating  
immunity and stress resistance by MEK-1 **MAPK** kinase and VHP-1  
**MAPK** phosphatase.

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STN  
TI Rapid transmission of oxidative and nitrosative stress signals from roots  
to shoots in Arabidopsis.

L6 ANSWER 53 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
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TI Expression of the Nicotiana protein kinase (NPK1) enhanced drought  
tolerance in transgenic maize.

L6 ANSWER 54 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
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TI Molecular genetic perspectives on cross-talk and specificity in  
**abiotic stress** signalling in plants.

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TI Copper treatment activates mitogen-activated protein kinase signalling in  
rice.

L6 ANSWER 56 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
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TI Transient regulation of jasmonic acid-inducible rice MAP kinase gene  
(OsBWMK1) by diverse biotic and **abiotic stresses**.

L6 ANSWER 57 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on  
STN  
TI Mutational analysis of stress-responsive peanut dual specificity protein  
kinase. Identification of tyrosine residues involved in regulation of  
protein kinase activity.

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TI Disease resistance and **abiotic stress** tolerance in

rice are inversely modulated by an abscisic acid-inducible mitogen-activated protein kinase.

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TI Distinct regulation of salinity and genotoxic stress responses by Arabidopsis MAP kinase phosphatase 1.
- L6 ANSWER 60 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
TI **Abiotic stress** signaling pathways in plant cell.  
Original Title: Transdukcja sygnałów w komórce roślinnej pod wpływem stresów abiotycznych..
- L6 ANSWER 61 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
TI Activation of AtMEK1, an Arabidopsis **MAPKK**, and detection of its active form in seedlings treated with high salt and drought.
- L6 ANSWER 62 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
TI Mitogen-activated protein kinase cascades in plants: A new nomenclature.
- L6 ANSWER 63 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
TI Isolation of novel rice (*Oryza sativa* L.) multiple stress responsive MAP kinase gene, OsMSRMK2, whose mRNA accumulates rapidly in response to environmental cues.
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TI Expression of *Oryza sativa* MAP kinase gene is developmentally regulated and stress-responsive.
- L6 ANSWER 65 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
TI Plant-derived map kinase kinase.
- L6 ANSWER 66 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
TI Convergence and divergence of stress-induced mitogen-activated protein kinase signaling pathways at the level of two distinct mitogen-activated protein kinase kinases.
- L6 ANSWER 67 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
TI Recent advances in plant MAP kinase signalling.
- L6 ANSWER 68 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
TI Oxidative stress activates ATMPK6, an Arabidopsis homologue of MAP kinase.
- L6 ANSWER 69 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
TI Activation of tomato PR and wound-related genes by a mutagenized tomato MAP kinase kinase through divergent pathways.
- L6 ANSWER 70 OF 72 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN  
TI Various **abiotic stresses** rapidly activate Arabidopsis MAP kinases ATMPK4 and ATMPK6.
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TI Stressing the role of MAP kinases in mitogenic stimulation.

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TI MAP kinases in plant signal transduction.

=> d his

(FILE 'HOME' ENTERED AT 17:09:45 ON 18 JAN 2006)

FILE 'AGRICOLA, CAPLUS, BIOSIS' ENTERED AT 17:10:10 ON 18 JAN 2006

L1 32584 S MITOGEN ACTIVATED KINASE OR MAPK?

L2 4862 S L1 AND STRESS

L3 406 S L2 AND (TRANSGENIC OR TRANSFORM?)

L4 1503213 S MONOCOT OR DICOT

L5 13 S L3 AND L4

L6 72 S L1 AND ABIOTIC STRESS

L7 9 S L6 AND (TRANSGENIC OR TRANSFORM)

L8 282 DUP REM L3 (124 DUPLICATES REMOVED)

=> d l7 1-9 ti

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TI Activation of tomato PR and wound-related genes by a mutagenized tomato MAP kinase kinase through divergent pathways.

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TI Regulation of gene expression during water deficit stress.

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TI A mitogen-activated protein kinase NtMPK4 activated by SIPKK is required for jasmonic acid signaling and involved in ozone tolerance via stomatal movement in tobacco

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TI Protein and cDNA sequences of rice mitogen-activated protein kinase **MAPK5** and their use in enhancing biotic and **abiotic stress** tolerance in plants

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TI Expression of the Nicotiana protein kinase (NPK1) enhanced drought tolerance in **transgenic** maize

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TI Disease resistance and **abiotic stress** tolerance in rice are inversely modulated by an abscisic acid-inducible mitogen-activated protein kinase

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TI Tomato mitogen-activated protein kinase kinase tMEK2 in signal transduction pathways and disease and wound stresses

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TI Expression of the Nicotiana protein kinase (NPK1) enhanced drought tolerance in **transgenic** maize.

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TI Disease resistance and **abiotic stress** tolerance in rice are inversely modulated by an abscisic acid-inducible mitogen-activated protein kinase.

=> d 17 1-9 ab

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AB A mitogen-activated protein kinase kinase (**MAPKK**) gene, tMEK2, was isolated from tomato cv. Bonny Best. By mutagenesis, a permanently active variant, tMEK2MUT, was created. Both wild-type tMEK2 and mutant tMEK2MUT were driven by a newly described strong plant constitutive promoter, tCUP, in a tomato protoplast transient gene expression system. Pathogenesis-related genes, PR1b1, PR3 and Twil, and a wound-inducible gene, ER5, were activated by tMEK2MUT. Specific inhibitors of p38 class **MAPK** inhibited tMEK2MUT-induced activation of PR3 and ER5 but not that of PR1b1 or Twil gene. Arabidopsis dual-specificity protein tyrosine phosphatase1 (DsPTP1) and maize protein phosphatase 1 (PP1) inhibited tMEK2MUT-induced activation of the ER5 gene and the TWI1 gene, respectively, whereas PR1b1 and PR3 were not affected by either AtDsPTP1, or maize PP1, or Arabidopsis protein phosphatase 2A (PP2A). We have demonstrated for the first time that a single **MAPKK** activates an array of PR and wound-related genes. Our observation indicates that the activation of the genes downstream of tMEK2 occurs through divergent pathways and that tMEK2 may play an important role in the interaction of signal transduction pathways that mediate responses to both biotic (e.g. disease) and **abiotic stresses** (e.g. wound responsiveness).

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AB Water deficit is one of the most important environmental stress factors limiting the growth and productivity of agronomically important plants. Plant responses to water deficit are complex, involving the coordination and integration of multiple biochemical pathways leading to the expression of a number of genes encoding proteins which contribute to drought adaptation. A central response to water deficit is increased synthesis of abscisic acid (ABA), which in turn induces a range of physiological and biochemical effects. Genes whose expression is increased during water deficit include those encoding neoxanthin cleavage enzyme, the key enzyme of ABA biosynthesis, enzymes and proteins involved in osmotic adaptation and tolerance of cellular dehydration, cellular protective enzymes, and a range of signalling proteins such as protein kinases and transcription factors that are probably involved in intracellular signalling in response to water stress. Regulatory DNA sequences that confer responsiveness to water stress and ABA have been identified and the transcription factors that interact with such cis-elements are being characterised. It is clear that reversible protein phosphorylation is central to the perception and response to water deficit stress and the highly conserved mitogen-activated protein kinase (**MAPK**)-signalling pathway is the focus of intensive research. The involvement of inositol lipid- and calcium-based signalling has also been demonstrated. Significant progress has been made by the use of single-gene mutants and this will continue. It is also apparent that further advances will be made through the use of single cell micro-injection and transient expression assays, as well as by the use of **transgenic** and antisense technology.

L7 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN

AB The mitogen-activated protein kinase (**MAPK**) cascade is involved

in responses to biotic and **abiotic stress** in plants. In this study, we isolated a new **MAPK**, NtMPK4, which is a tobacco homolog of Arabidopsis MPK4 (AtMPK4). NtMPK4 was activated by wounding along with two other wound-responsive tobacco **MAPKs**, WIPK and SIPK. We found that NtMPK4 was activated by salicylic acid-induced protein kinase kinase (SIPKK), which has been isolated as an SIPK-interacting **MAPK** kinase. In NtMPK4 activity-suppressed tobacco, wound-induced expression of jasmonic acid (JA)-responsive genes was inhibited. NtMPK4-silenced plants showed enhanced sensitivity to ozone. Inversely, **transgenic** tobacco plants, in which SIPKK or the constitutively active type SIPKKEE was overexpressed, exhibited greater responsiveness to wounding with enhanced resistance to ozone. We further found that NtMPK4 was expressed preferentially in epidermis, and the enhanced sensitivity to ozone in NtMPK4-silenced plants was caused by an abnormal regulation of stomatal closure in an ABA-independent manner. These results suggest that NtMPK4 is involved in JA signaling and in stomatal movement.

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AB The present invention relates to the protein and cDNA sequences of rice mitogen-activated protein kinase encoded by gene **MAPK5**. The rice **MAPK5** gene, its protein and kinase activity were induced by abscisic acid, pathogen infection, wounding, drought, salt and cold temperature. However, suppression of **MAPK5** expression and kinase activity in dsRNAi **transgenic** plants resulted in constitutive expression of pathogenesis-related genes such as PR-1 and PR-10 but enhanced resistance to fungal and bacterial pathogens. In contrast, overexpressed **transgenic** lines exhibited elevated **MAPK5** kinase activity and increased tolerance to drought, salt and cold stresses. This invention provides methods for increasing tolerance to abiotic and biotic stress in plant using **MAPK5**.

L7 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN

AB Drought is one of the most important **abiotic stresses** affecting the productivity of maize. Previous studies have shown that expression of a mitogen-activated protein kinase kinase kinase (**MAPKKK**) gene activated an oxidative signal cascade and led to the tolerance of freezing, heat, and salinity stress in **transgenic** tobacco. To analyze the role of activation of oxidative stress signaling in improving drought tolerance in major crops, a tobacco **MAPKKK** (NPK1) was expressed constitutively in maize. Results show that NPK1 expression enhanced drought tolerance in **transgenic** maize. Under drought conditions, **transgenic** maize plants maintained significantly higher photosynthesis rates than did the non-**transgenic** control, suggesting that NPK1 induced a mechanism that protected photosynthesis machinery from dehydration damage. In addition, drought-stressed **transgenic** plants produced kernels with wts. similar to those under well-watered conditions, while kernel wts. of drought-stressed non-**transgenic** control plants were significantly reduced when compared with their non-stressed counterparts.

L7 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN

AB Mitogen-activated protein kinase (**MAPK**) cascades play an important role in mediating stress responses in eukaryotic organisms. However, little is known about the role of **MAPKs** in modulating the interaction of defense pathways activated by biotic and abiotic factors. In this study, we have isolated and functionally characterized a stress-responsive **MAPK** gene (OsMAPK5) from rice. OsMAPK5 is a single-copy gene but can generate at least two differentially spliced transcripts. The OsMAPK5 gene, its protein, and kinase activity were inducible by abscisic acid as well as various biotic (pathogen infection) and abiotic (wounding, drought, salt, and cold) stresses. To determine its biol. function, we generated and analyzed **transgenic** rice plants with overexpression (using the 35S promoter of Cauliflower mosaic virus)

or suppression (using double-stranded RNA interference [dsRNAi]) of OsMAPK5. Interestingly, suppression of OsMAPK5 expression and its kinase activity resulted in the constitutive expression of pathogenesis-related (PR) genes such as PR1 and PR10 in the dsRNAi **transgenic** plants and significantly enhanced resistance to fungal (*Magnaporthe grisea*) and bacterial (*Burkholderia glumae*) pathogens. However, these same dsRNAi lines had significant redns. in drought, salt, and cold tolerance. By contrast, overexpression lines exhibited increased OsMAPK5 kinase activity and increased tolerance to drought, salt, and cold stresses. These results strongly suggest that OsMAPK5 can pos. regulate drought, salt, and cold tolerance and neg. modulate PR gene expression and broad-spectrum disease resistance.

L7 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2006 ACS on STN

AB A mitogen-activated protein (MAP) kinase kinase gene, tMEK2, was isolated from tomato cv. Bonny Best. By mutagenesis, a permanently-active variant, tMEK2MUT, was created. Both wild-type tMEK2 and mutant tMEK2MUT were driven by a strong constitutive promoter, tCUPA, in a tomato protoplast transient expression system. Pathogenesis-related genes, PR1b1 and PR3, and a wound-inducible gene, ER5, were activated by tMEK2MUT expression revealing the convergence of the signal transduction pathways for pathogen attack and mech. stress at the level of **MAPKK**. Activation of biotic and **abiotic stress** response genes downstream of tMEK2 occurred through divergent pathways involving at least two classes of mitogen-activated protein kinase. This study shows that tMEK2 may play an important role in the interaction of signal transduction pathways that mediate responses to both biotic (eg disease) and abiotic (wound responsiveness) stresses.

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AB Drought is one of the most important **abiotic stresses** affecting the productivity of maize. Previous studies have shown that expression of a mitogen-activated protein kinase kinase kinase (**MAPKKK**) gene activated an oxidative signal cascade and led to the tolerance of freezing, heat, and salinity stress in **transgenic** tobacco. To analyse the role of activation of oxidative stress signalling in improving drought tolerance in major crops, a tobacco **MAPKKK** (NPK1) was expressed constitutively in maize. Results show that NPK1 expression enhanced drought tolerance in **transgenic** maize. Under drought conditions, **transgenic** maize plants maintained significantly higher photosynthesis rates than did the non-**transgenic** control, suggesting that NPK1 induced a mechanism that protected photosynthesis machinery from dehydration damage. In addition, drought-stressed **transgenic** plants produced kernels with weights similar to those under well-watered conditions, while kernel weights of drought-stressed non-**transgenic** control plants were significantly reduced when compared with their non-stressed counterparts.

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